OrgModel Manual

SIMPROCESS

Release 1

CACI

EVER VIGILANT

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Organization of the SIMPROCESS Documentation Set

The SIMPROCESS documentation set consists of four manuals:

- *Getting Started With SIMPROCESS*
- *SIMPROCESS User's Manual*
- *SIMPROCESS Metadata Manual*
- *SIMPROCESS OrgModel Manual*

All of the manuals can be opened directly from the **Help/SIMPROCESS Manuals** menu. Also, each manual includes this section which provides links to the chapters in every manual. Press the Control key when clicking any link to open the linked file in a new window. For Windows systems, in order for links between manuals to work properly, Adobe Acrobat or Acrobat Reader must be used to view the manuals.

Getting Started

The *Getting Started With SIMPROCESS* manual is a must for first time SIMPROCESS users. This manual can also be used for evaluation purposes. The chapters are

- Business Process Modeling With SIMPROCESS
- Installation

- Building Your First Model With SIMPROCESS
- Evaluating Alternatives With SIMPROCESS
- Demonstration and Reference Models

User's Manual

The *User's Manual* is divided into four parts with each part being a separate file. Part A is an excellent reference for beginners and casual users. This part contains detailed documentation of the basic and intermediate functions of SIMPROCESS. The chapters are

- Process Modeling and Analysis with SIMPROCESS
- SIMPROCESS Basics
- Statistical Modeling Constructs
- Activity Modeling Constructs
- Resource Modeling Constructs
- Graphical Modeling Constructs
- Activity-Based Costing
- Statistical Output Reports

Part B is a reference intended for advanced users of SIMPROCESS. This part contains detailed documentation of the programming and library management functions in SIMPROCESS Professional Edition. The chapters are

- Reusable Templates and Libraries
- Customizing a Model with Attributes and Expressions
- More Advanced Model Building
- Exporting Results

Part C describes the integrated tools included with SIMPROCESS Professional. The chapters are

- Advanced Data Analysis
- SIMPROCESS Database
- Experiment Manager
- OptQuest for SIMPROCESS
- SIMPROCESS Dashboards
- Model Bundles
- Custom Reports
- Scenarios

The Appendices are

- Importing Version 2.2.1 Models
- Activity Summary Table
- SIMPROCESS File Structure
- Statistical Distributions
- Statistical Tools Glossary
- SIMPROCESS System Attributes and Methods
- External Event Files
- Simulation Results File
- UML Interfaces
- Running Models Without GUI
- SIMPROCESS and External Java Classes

Metadata Manual

The Metadata Manual describes how to build and edit SIMPROCESS metamodels, assign metamodels to a SIMPROCESS model, and enter metadata in a SIMPROCESS model. The chapters are

- SIMPROCESS Metadata
- SIMPROCESS Metamodel Editor
- Assigning Metamodels
- Entering Metadata
- BPEL Metadata

OrgModel Manual

The OrgModel Manual describes how to build and edit SIMPROCESS Organization and Resource Models (OrgModels) and assign OrgModels to a SIMPROCESS model. The chapters are

- SIMPROCESS Organization and Resource Models
- SIMPROCESS OrgModel Editor
- Assigning OrgModels
- Using OrgModels with SIMPROCESS

CHAPTER 1

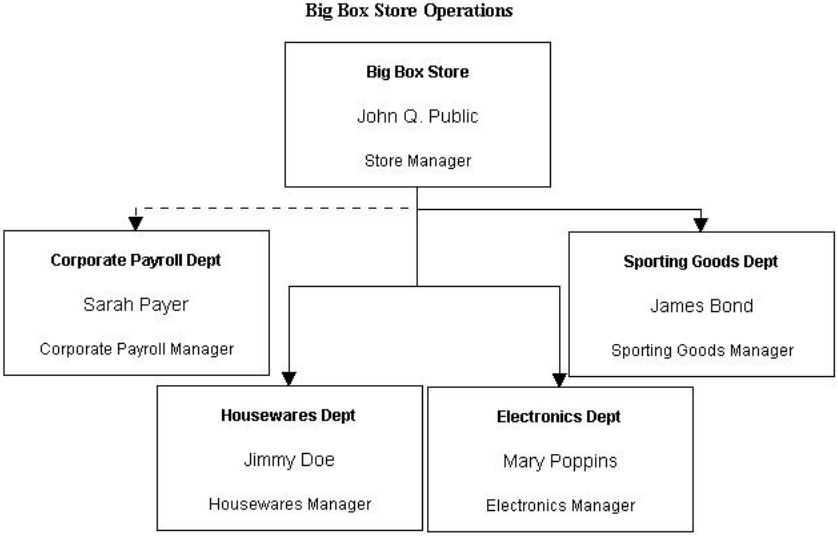
SIMPROCESS Organization and Resource Models

This chapter presents an overview of SIMPROCESS Organization and Resource Models and introduces the subsequent chapters of this OrgModel Manual.

What are Organization and Resource Models?

At its simplest, a SIMPROCESS Organization and Resource Model (referred to here and in other SIMPROCESS documentation as an OrgModel) is an organization chart. It consists of components described below.

- Org Nodes - Each Org Node represents part of the organization structure being modeled, which might be an individual, department, or other entity. Each Org Node contains fields for defining and describing it in the overall organization, and each can carry Resources with a subset of the characteristics of those defined in a SIMPROCESS model.
- Links - Links connect Org Nodes and represent the relationships between them. The two types of Links are solid and dotted. A solid Link represents a direct reporting relationship between two Org Nodes, where one is the superior and the other is a subordinate. An Org Node may have only one direct superior; it may have an unlimited number of direct subordinates. A dotted Link represents a support relationship. There are no limits to the number of "supported superior" or "supporting subordinate" relationships that can exist for any Org Node.
- Text Nodes - Text Nodes provide a convenient way of putting textual information on the graphical OrgModel to help document it and improve its appearance.



Above is an example OrgModel which includes all of these components. There's a Text Node with the text **Big Box Store Operations** at top. The Org Node for **Sarah Payer** of the **Corporate Payroll Dept** demonstrates a supporting Link to **John Q. Public**, the **Store Manager**, while other Org Nodes have solid Links indicating that they are direct subordinates. Additional information about the

properties of each of these types of components can be found in Chapter 2 (see "OrgModel Component Properties," beginning on page 18).

Overview of This Manual

Chapter 2 of this manual will provide detailed documentation of the operation and use of the SIMPROCESS OrgModel Editor. Chapter 3 will address assigning OrgModels to SIMPROCESS models so that OrgModel Org Nodes and Resources defined in OrgModels are available for use in SIMPROCESS models. And finally, Chapter 4 provides a detailed discussion of the how and why of using OrgModels with SIMPROCESS models.

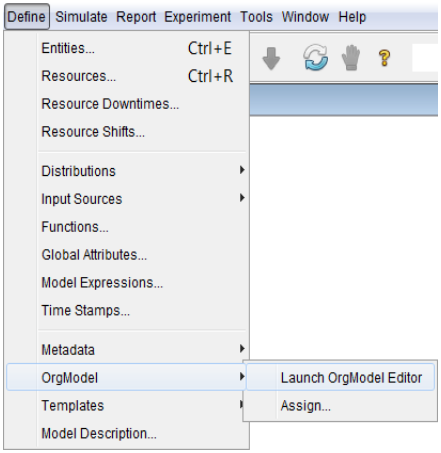
CHAPTER 2

SIMPROCESS OrgModel Editor

This chapter describes the SIMPROCESS OrgModel Editor and its operation.

Launching the OrgModel Editor

The SIMPROCESS OrgModel Editor is a separate application installed with SIMPROCESS. It can be launched from within SIMPROCESS by choosing **Launch OrgModel Editor** from the **Define/OrgModel** menu.

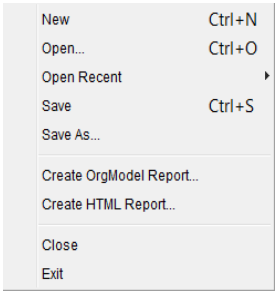


When launched in this way, the OrgModel Editor opens to an empty OrgModel with a default name assigned. If the OrgModel Editor is already open, a new editor window will open with an empty OrgModel and a default name.

OrgModel Editor Operation

OrgModel Editor Menus

File Menu



New opens a new OrgModel for editing and assigns it a default name. Note that each opened OrgModel will open in its own editor window.

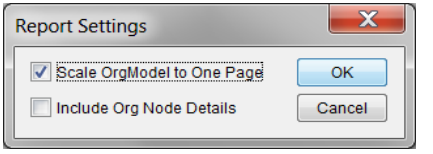
Open... opens a previously saved OrgModel for editing. OrgModel files have a file extension of `.orm` and must be stored in the `orgmodel` directory located in the SIMPROCESS working directory. (The SIMPROCESS working directory is located in the user's home directory. See "SIMPROCESS Working Directory".) This menu item displays OrgModel files located in that directory or any included subdirectory; it excludes any OrgModel file which is already open.

Open Recent displays a list of up to five previously opened OrgModels for easy access. The last item on the menu is **Clear Menu**, which removes all recently opened OrgModels from the list. Items which no longer exist are automatically removed from this menu when the OrgModel Editor is opened.

Save saves the current OrgModel to a file within the `orgmodel` directory beneath the SIMPROCESS working directory. It will only be enabled when the OrgModel has unsaved changes. The first time **Save** is invoked on a new OrgModel, the **Save As...** command will be used instead to allow assignment of a meaningful name. On subsequent uses, it will save the current OrgModel to the file from which it was read, thereby disabling the **Save** menu item until further changes occur.

Save As... allows saving the current OrgModel to a different file within the orgmodel directory, making it possible to copy one OrgModel to another name. The `.orm` extension will be applied to the file name if omitted. A standard file selection dialog is displayed for saving OrgModels. It allows navigation within the orgmodel directory but not above or outside it, and it allows creation of subdirectories within it.

Create OrgModel Report... will only be enabled if the OrgModel is not empty. When selected, it generates a report listing selected portions of the OrgModel currently in the editor. It begins by displaying a Report Settings dialog as shown here:



When first displayed, **Scale OrgModel to One Page** is selected by default. This setting will cause the graphical portion of the OrgModel to be scaled so that it fits onto a single page in the Report Viewer. (See "Report Viewer" in the *SIMPROCESS User's Manual* for more information on Report Viewer operation and options.) If deselected, the OrgModel will be output at full size and broken into as many parts as needed to include all of it in the output report. The pages will be ordered from left to right, with additional rows added as necessary, and some blank pages may be necessary to form a complete visual image. The selection state of **Scale OrgModel to One Page** will be remembered on subsequent uses of the **Create OrgModel Report...** menu item until all OrgModel Editor frames have been closed.

When first displayed, **Include Org Node Details** is unselected by default. This setting means that only the graphical portion of the OrgModel will be sent to the Report Viewer. When selected, the resulting

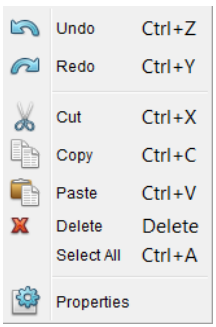
report will list every Org Node in the OrgModel. For each Org Node it will list the key information displayed in the graphical OrgModel, along with other fields such as **Description** and **Role**, superior and/or subordinate Org Nodes, and all Resources present on the Org Node. The selection state of **Include Org Node Details** will be remembered on subsequent uses of the **Create OrgModel Report...** menu item until all OrgModel Editor frames have been closed.

Create HTML Report... will only be enabled if the OrgModel is not empty. When selected, it begins by prompting for the selection of a directory into which it should write the two files it will create. Once a directory has been selected, it will check to determine if either of those files exists and, if so, request permission to overwrite them. The first file created will be a graphic image in the form of a JPEG file. The extension `.jpg` will be used, and the primary file name will be the same as that displayed in the OrgModel Editor's window except that any slashes representing directory names will be replaced by underscore characters. The second file will use the same naming convention and have an extension of `.html`. This file should open in any modern Web browser and not require any special considerations or capabilities. This simple, two-file approach will simplify inclusion of these HTML reports into published SIMPROCESS models once an OrgModel is assigned for use there.

Close closes the current OrgModel. If changes have been made since the last save, there will be a prompt to save the OrgModel. If no other OrgModel frames remain open, this will terminate the OrgModel Editor.

Exit closes the all open OrgModels. Each frame will prompt to save if necessary. Selecting **Cancel** in response to any save prompt will stop the exit process.

Edit Menu



Undo reverses any edit consisting of a single action. Creating a new Org Node, which presents a dialog for initial assignment of properties and creation of Resources, constitutes an edit that can be undone since that is a single action. Changing any/all properties of an existing Org Node via the **Edit Org Node Properties** dialog; removing one or more Org Nodes, Text Nodes and Links by keyboard or mouse selection; using the **Delete**, **Cut** or other actions; and dragging selected items to a new location in the

OrgModel are considered single action edits. **Undo** will only be enabled when an edit that can be undone has taken place.

Redo reverses in a single step any edit which was undone using **Undo**. **Redo** will only be enabled when an **Undo** has taken place. When **Redo** is used to recreate an edit, it can be undone again using **Undo**.

Cut removes the selected items in an OrgModel and places them on the clipboard. **Cut** will only be enabled when conditions allow its use. For instance, it is not possible to **Paste** a single Link into an OrgModel, so **Cut** will not be enabled when only a Link is selected. Other actions may also result from invoking **Cut**. For example, selecting any Org Node and cutting it to the clipboard means that any Links that existed between it and subordinates and/or superiors are no longer sustainable, so they are removed. They do not get put onto the clipboard with the selected Org Node, though their removal can be reversed using **Undo**. (The clipboard used is shared across all OrgModel Editor frames in a single session.)

Copy copies the selected items in an OrgModel to the clipboard without removing them from the OrgModel. The same restrictions listed for **Cut** apply to **Copy**, such as being unable to copy a single Link to the clipboard. (The clipboard used is shared across all OrgModel Editor frames in a single session.)

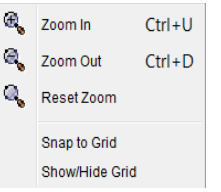
Paste puts items on the clipboard into the active OrgModel. When pasting Org Nodes, any Resources defined will have their names modified if necessary to ensure that Resource names are unique across the entire OrgModel. Any pasted Org Node or Text Node will land at the exact same graphical coordinates from which it was copied, whether from the current OrgModel or another; as a result, they may overlap others and need to be moved. Note that Links retrieved from the clipboard are attached to Org Nodes at both ends. (The clipboard used is shared across all OrgModel Editor frames in a single session.)

Delete removes the selected items in an OrgModel without placing them on the clipboard for subsequent pasting. Similar to the **Cut** and **Copy** commands, there are side effects when **Delete** is used. For example, selecting two Org Nodes without selecting the Link between them will still necessitate removal of the Link since it cannot be sustained without both its source and target Org Nodes.

Select All selects all items displayed in the OrgModel. This item is always enabled and selects all Org Nodes, Links and Text Nodes in the OrgModel.

Properties edits the properties of selected items in the OrgModel. Which item is edited depends on selection order. That is, when multiple items are selected, the one which is considered the first selected item will be editable. When using rubber band (or marquee) selection techniques with a mouse, it's not always immediately obvious which is the first item selected. Pointing and clicking to select individual items is more precise. Most of the time, simply double-clicking the item to be edited will suffice.

View Menu



Zoom In provides a closer view of the OrgModel by scaling the graphical view. This can be helpful for gaining finer control over the placement of items on the display. Note that the zoom setting is applied only to the current OrgModel Editor frame and is not stored with the OrgModel, nor is it applied to any reports or HTML.

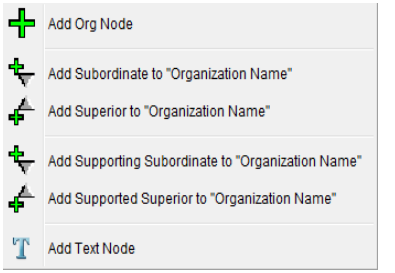
Zoom Out provides a more distant view of the OrgModel by scaling the graphical view. This can be helpful for larger models which might not be fully visible even if the frame is maximized. Note that there is a limit to how far out an OrgModel will zoom, after which this command will be ignored. Like the **Zoom In** command, this setting only applies to the current OrgModel Editor frame and is not persistent.

Reset Zoom automatically resets the scaling of the graphical view of an OrgModel to its default setting.

Snap to Grid causes newly added items, or items moved by mouse actions, to snap to a grid of alignment points, making it easier to accomplish alignment of OrgModel components. This setting applies only to the current OrgModel Editor frame.

Show/Hide Grid causes the grid of alignment points used in Snap to Grid to toggle between visible and invisible. This setting applies only to the current OrgModel Editor frame.

Node Menu


Add Org Node
Add Subordinate to "Organization Name"
Add Superior to "Organization Name"
Add Supporting Subordinate to "Organization Name"
Add Supported Superior to "Organization Name"
Add Text Node

Add Org Node creates a new Org Node not linked to any others. When invoked, it will first present a new **Edit Org Node Properties** dialog with some default values for the new Org Node. Once data has

been entered and all edits passed, selecting **OK** will create the new Org Node and place it in the OrgModel. Every new Org Node created in this fashion assumes the same initial coordinates internally. If the rectangle for the new Org Node is entirely inside of or exactly matches another Org Node or Text Node, it will be moved down and right until it no longer does so. The newly created Org Node will automatically be selected on creation to make moving it easy. More details on the properties of an Org Node can be found [somewhere else].

Add Subordinate will only be enabled when an Org Node is selected. When enabled, it will say **Add Subordinate to [Name]**, where the value in the **Name** field of the selected Org Node (or the **Org Name** field if **Name** is empty) will appear in the menu item. When invoked, a new **Edit Org Node Properties** dialog with default values will be displayed. When editing is completed and **OK** is selected, the new Org Node will be added to the OrgModel and a Link created between it and the designated superior Org Node.

Add Superior will only be enabled when an Org Node is selected which does not already have a direct superior. When enabled, it will say **Add Superior to [Name]**, where the value in the **Name** field of the selected Org Node (or the **Org Name** field if **Name** is empty) will appear in the menu item. When invoked, a new **Edit Org Node Properties** dialog with default values will be displayed. When editing is completed and **OK** is selected, the new Org Node will be added to the OrgModel and a solid Link created between it and the chosen Org Node. The new superior Org Node will derive its initial position from the selected subordinate, and that position will be adjusted if it results in the rectangle being beyond the top or left of the OrgModel to ensure that it's entirely visible.

Add Supporting Subordinate will only be enabled when an Org Node is selected. When enabled, it will say **Add Supporting Subordinate to [Name]**, where the value in the **Name** field of the selected Org Node (or the **Org Name** field if **Name** is empty) will appear in the menu item. A new **Edit Org Node Properties** dialog with default values will be displayed. When editing is completed and **OK** is selected, the new Org Node will be added to the OrgModel and a "dotted" Link created between it and the Org Node which it will support.

Add Supported Superior will only be enabled when an Org Node is selected. When enabled, it will say **Add Supported Superior to [Name]**, where the value in the **Name** field of the selected Org Node (or the **Org Name** field if **Name** is empty) will appear in the menu item. A new **Edit Org Node Properties** dialog with default values will be displayed. When editing is completed and **OK** is selected, the new Org Node will be added to the OrgModel and a "dotted" Link created between it and the Org Node which will provide support to it. The new superior Org Node will derive its initial position from the selected subordinate, and that position will be adjusted if it results in the rectangle being beyond the top or left of the OrgModel to ensure that it's entirely visible.

Add Text Node is enabled at all times and adds a new Text Node to the OrgModel. A new **Edit Text Node Properties** dialog with default values is displayed. When values are entered and **OK** selected, the new Text Node will be placed in the OrgModel. It will be selected upon creation, so that its boundaries can be adjusted as necessary. Its text content will wrap to fit within the specified boundaries.

Link Menu

Change Superior will only be enabled when exactly two Org Nodes are selected and when the second selected Org Node is allowed to be designated as the new direct superior of the first selected Org Node. (Note that an Org Node may have only one direct superior, while it may have any number of direct subordinates.) When enabled, it will say **Change Superior of [Name]**, where the value in the **Name** field of the first selected Org Node (or the **Org Name** field if **Name** is empty) will appear in the menu item. When selected, the existing solid Link between the second selected Org Node and its current direct superior will be removed, after which a new solid Link will be created emanating from its newly designated direct superior.

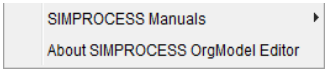
Make Direct Link between Selected Org Nodes will only be enabled when exactly two Org Nodes are selected and when the first selected Org Node is allowed to be a direct subordinate of the second selected Org Node. (Note that an Org Node may have only one direct superior, though it may have support relationships with any number of Org Nodes.) When enabled, it will say **Make [Name1] a Direct Subordinate of [Name2]**, where the values in the **Name** fields of the selected Org Nodes (or the **Org Name** field if **Name** is empty) will appear in the menu item. When selected, a solid Link will be created between the selected Org Nodes.

Make Supporting Link between Selected Org Nodes will only be enabled when exactly two Org Nodes are selected and when the first selected Org Node is allowed to be a supporting subordinate of the second selected Org Node. (Note that an Org Node may have only one direct superior, though it may have support relationships with any number of Org Nodes.) When enabled, it will say **Make [Name1] a Supporting Subordinate of [Name2]**, where the values in the **Name** fields of the selected Org Nodes (or the **Org Name** field if **Name** is empty) will appear in the menu item. When selected, a dotted Link will be created between the selected Org Nodes.

Window Menu

This menu contains a list of open OrgModels. Selecting one causes the appropriate OrgModel Editor frame to come to the front.

Help Menu

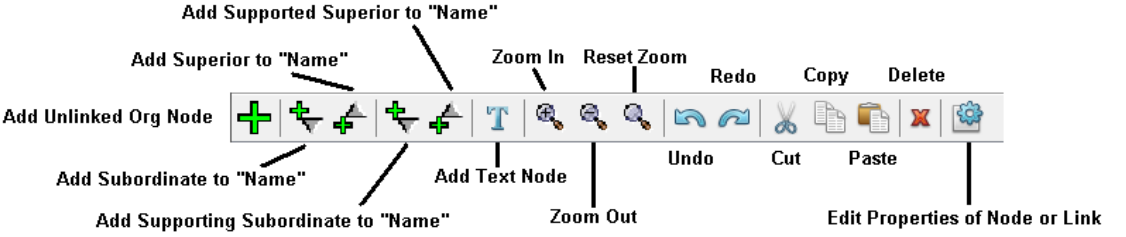


SIMPROCESS Manuals will include menu items that provide direct access to the *SIMPROCESS OrgModel Manual* (this document) and each part of the *SIMPROCESS User's Manual*.

About SIMPROCESS OrgModel Editor will display information about the OrgModel Editor, including version, copyright and contact information.

OrgModel Editor Toolbar

Below the menu is the toolbar.



Each icon on the toolbar corresponds to a menu item previously described. These buttons will often be more convenient than using the menus, and it will be readily apparent when each is enabled due to appearance changes. Place the mouse pointer over any icon to display a tooltip indicating its purpose. The toolbar icons here are also on the corresponding menus to help clarify which ones have matching functions.

The first six icons correspond to the menu items on the **Node** menu; separators seen here correspond to separators also present on that menu. The **Name** field values (or the **Org Name** field when **Name** is empty) will appear in the tooltips for these icons just as they do in the corresponding menu items.

The next three icons, resembling a magnifying glass, correspond to the first three items on the **View** menu.

The remaining icons correspond to those found on the **Edit** menu, except that there is no toolbar icon for **Select All**.

OrgModel Component Properties

Org Node Properties

Each Org Node appearing on the graphical display includes three fields which are its primary identifying information. These are the **Org Name**, **Name** and **Title** fields. The **Org Name** field may not be empty and must be no more than 50 characters in length (any leading or trailing space characters are removed). The **Name** and **Title** fields may be empty, but they too are limited to not more than 50 characters in length. In addition, the appearance of these three fields can be changed via font settings in the **Edit Org Node Properties** dialog. There are, however, additional fields available to provide further

information about the organizational entity represented by the Org Node, affect how it is displayed in the graphical OrgModel, and to create Resources it owns (which can be available once the OrgModel has been assigned to a SIMPROCESS model).

Description

This field must be designated as **Text** (the default), **File**, or **URL**. When **File** is selected, a **Browse** button is enabled that allows navigation to any file available in the file system, after which its complete path will be placed into the **Description** field. When the field is designated as **File** or **URL**, its contents are not validated and are therefore not guaranteed to be an actual file path or valid **URL**.

Role

This is a text field into which any meaningful information may be entered to describe this Org Node's role in the organization being modeled.

Display Settings

Org Node border and fill colors are selected here. The default border color is black, meaning that the Org Node will be outlined in black. The default fill color is white, so that no color will be used for the Org Node. The available colors are listed in the SIMPROCESS Color Table, which can be found in Appendix F of the *SIMPROCESS User's Manual* (SIMPROCESS Color Table).

Resources

This tab is based on the dialog used in SIMPROCESS to define and edit Resources in a SIMPROCESS model. (See "Resource Modeling Constructs" for a full discussion of SIMPROCESS Resources.) Not all of the properties seen on a Resource in SIMPROCESS are present in an Org Node, as they are only meaningful in a simulation context. As a result, items such as statistics collection and downtimes will be available once a Resource is assigned for use within a SIMPROCESS model. The properties which are visible in the table can be edited there directly; in addition, all properties of a Resource can be edited in a separate **Resource Properties** dialog. The **Name** of a Resource must be unique among all Resources in the OrgModel. Numeric fields which support statistical distributions will support only the standard set of predefined distributions available in SIMPROCESS.

Text Node Properties

A Text Node exists solely to provide useful information on the graphical OrgModel. Its text content can be essentially anything. The **Edit Text Node Properties** dialog allows you to enter text of any length; it also allows you to specify the font name and size, along with indicating whether to use bold or italics. In addition, the alignment of the text (**Left**, **Center**, or **Right**) is specified. One thing that cannot be set via this dialog, however, is the actual location of the Text Node and control over its boundaries. For

that, use the mouse to select the node, then click and drag to change its appearance. When you click on the Text Node, a set of "handles" will appear indicating its current rectangular bounds. Hover the mouse pointer over any handle and wait for the cursor to change to one with arrows at both ends. When this occurs, click and drag the outline into a different shape. The text content will automatically wrap as necessary to take advantage of the newly defined rectangle. Note that it's entirely possible to have some text invisible if you drag the boundaries in certain ways. You'll also note that each individual drag operation can be undone or redone using the **Undo**/**Redo** features on the **Edit** menu or the toolbar.

Link Properties

A Link indicates the relationship between a pair of Org Nodes. By default, a Link will be solid or dotted (depending on how it's created) and use automatic routing. But there are other settings available for each Link.

Link Label

This field is empty by default, but text can be entered. Once populated, its default location will depend somewhat on its length and on the route taken by the Link on the graphical display. After the **Edit Link Properties** dialog is closed and the label text displayed, it can also be dragged to a new location by clicking and dragging using the mouse. This location will change if either Org Node attached to the Link is moved so that it is approximately "centered" along the Link. When both Org Nodes and the Link between them are moved in a single action, relative location of the label will remain unchanged.

Style

These buttons allow you to toggle between **Solid** and **Dotted** styles to indicate the relationship between two Org Nodes. However, since an Org Node may have no more than one direct superior (a **Solid** line style for the Link), this setting will be disabled when the Link being edited is a **Dotted** style and the target Org Node already has a Link to a direct superior.

Routing

By default, a new Link will use **Automatic** routing. This means the Link will be routed using line segments that are always vertical or horizontal, with 90-degree turns at various points along the way. No line segment will overlay the boundary of any Org Node, though some might overlay other Links.

Alternatively, however, **Manual** routing can be used. When this selection is made, you'll see that the Link will simply take the shortest distance between its source and target Org Nodes. When **Manual** routing is in effect, you have the added ability to place control points along the Link at spots you select. To do this, right-click at any point along the Link and a new control point will appear. Conversely, right-clicking on any control point you've previously added will remove it from the Link. When a Link using **Manual** routing is selected, all control points are visible and can be clicked and dragged to change

their locations. Be aware that these control points are at absolute locations. That is, they do not move when either the source or target Org Nodes are moved. They will, however, maintain their relative positions when the selection being dragged includes the Link and both its source and target Org Nodes. Experiment to see how this works.

Finally, be aware that switching from **Manual** to **Automatic** routing will discard all control points created on a Link. The application once again takes complete control of deciding whether and when any control points are needed.

Description

You can describe a Link in the same way as an Org Node. The **Description** field must be designated as **Text**, **File** or **URL**, and selecting **File** enables a **Browse** button to let you choose any file available to you. As with an Org Node, there's no validation of the **Description** field's content for a **File** or **URL**.

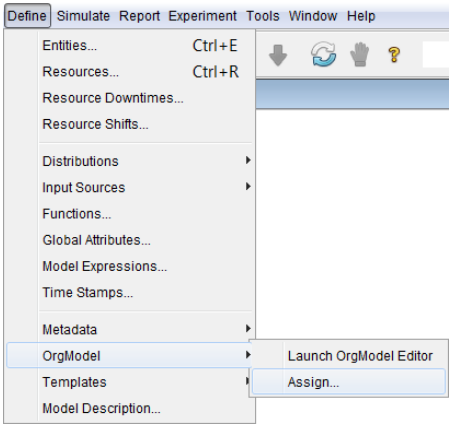
CHAPTER 3

Assigning OrgModels

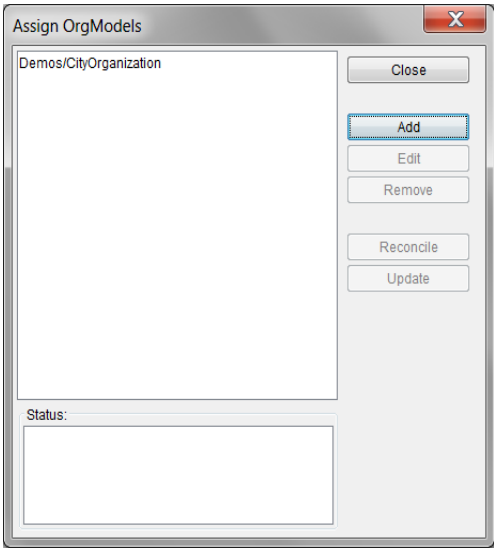
This chapter describes how to assign one or more OrgModels to a SIMPROCESS model.

The Assign… Menu Item

Assigning OrgModels to a SIMPROCESS model can only be done from the **Define/OrgModel/Assign...** menu item. This menu item is only active when a SIMPROCESS model is open.



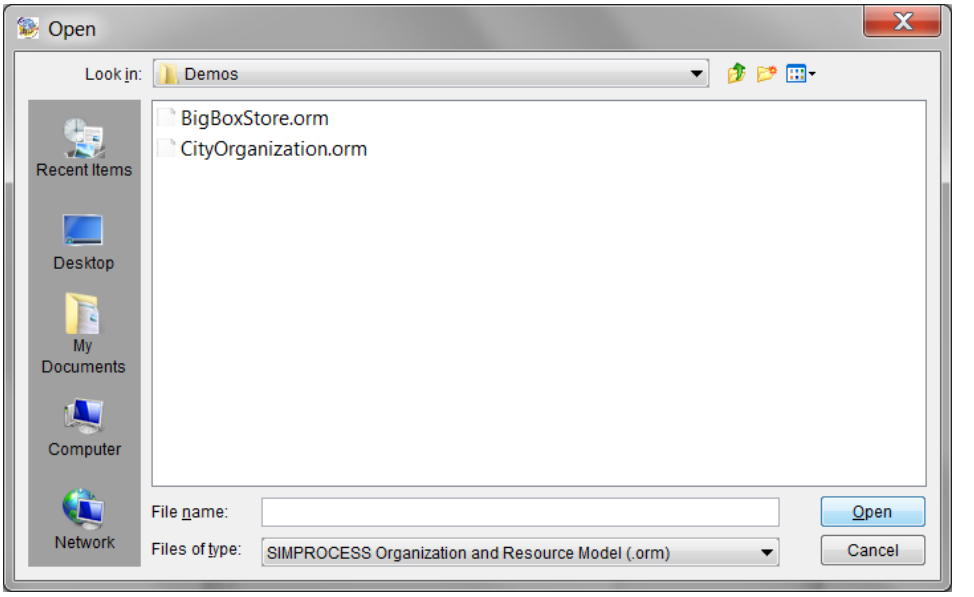
Selecting **Assign...** displays the **Assign OrgModels** dialog showing a list of OrgModels assigned to the current SIMPROCESS model. If no OrgModels have been assigned, the list is empty.



Assign OrgModel Operation

Adding OrgModels

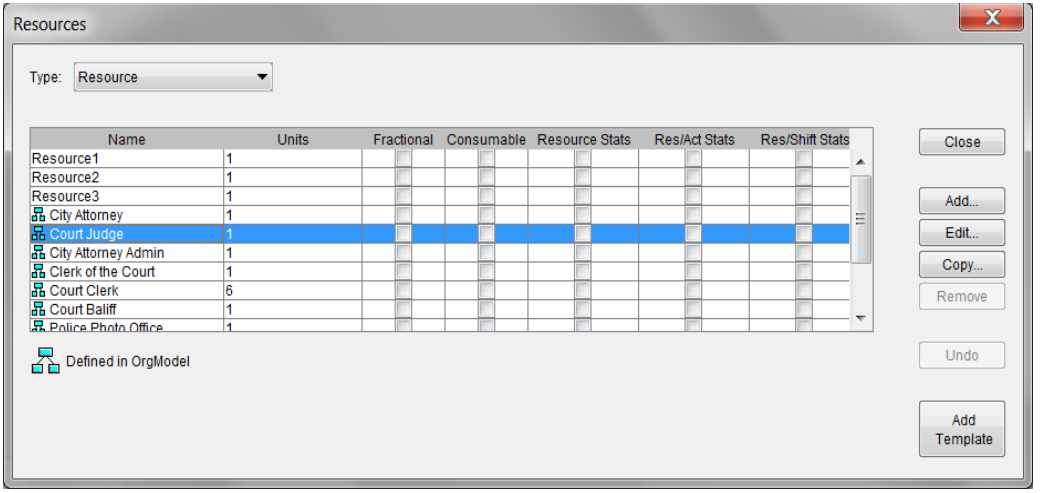
Select **Add** to assign an OrgModel to the current SIMPROCESS model. A file selection dialog will display the OrgModel files available in the `orgmodel` directory, which is located in the SIMPROCESS working directory (see "SIMPROCESS Working Directory"). Any OrgModels already assigned to the current model will not appear for selection.



If the selected OrgModel file is in some way damaged, an error dialog will advise that it is not valid and the assignment will be rejected. If any of the Resources defined in the OrgModel have the same names as Resources in the SIMPROCESS model, a dialog will appear that lists those names and the assignment will be rejected. The names of Resources in either the OrgModel or the SIMPROCESS model can be modified before trying again to assign it. If neither of these problems occurs, the newly added OrgModel will be placed on the list.

Once assigned, all Resources defined in the selected OrgModel will be added to the SIMPROCESS model. When using the **Define/Resources** menu item (or the **Define Resources** button on the Model Toolbar) in SIMPROCESS, their names will appear in the resulting dialog with an icon next to them indicating that they originated in an OrgModel, as shown below. Their names will not be editable in that dialog or in any **Resource Properties** dialog, and they cannot be removed via that dialog. Otherwise, they will be available for use in SIMPROCESS in virtually the same way as locally defined Resources.

Assigned OrgModels are also available for use with swimlanes. An Org Node from an assigned OrgModel can be associated with a swimlane in the SIMPROCESS model.



Editing Assigned OrgModels

Selecting an assigned OrgModel will enable the **Edit** button. Selecting this button (or double-clicking the OrgModel's name) will launch the OrgModel Editor and open the selected OrgModel. If the OrgModel Editor is already open, a new frame will open with the selected OrgModel. If already open, its frame will come to the front. When the SIMPROCESS window returns to the front, the OrgModel will be validated again and its status text updated if appropriate.

Removing Assigned OrgModels

Selecting an assigned OrgModel will enable the **Remove** button. Selecting this button will attempt to remove the OrgModel assignment from SIMPROCESS. What actually happens will depend on certain conditions with regard to the Resources obtained from the OrgModel and Org Node swimlane assignments.

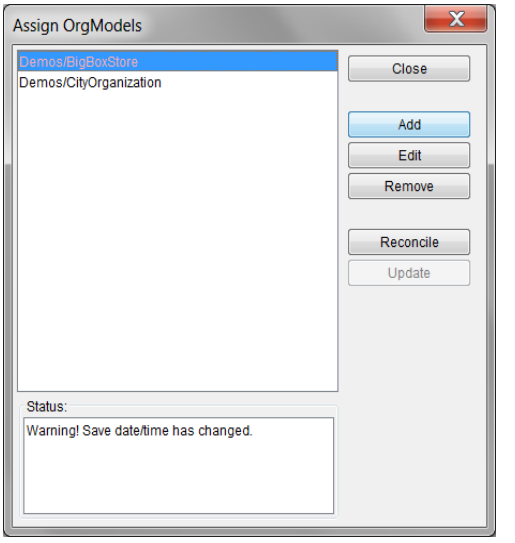
- If none of the Resources obtained from the selected OrgModel have been used (assigned to Activities, Resource Downtimes, Resource Shifts, etc.) in the SIMPROCESS model, then all such Resources will be removed from the SIMPROCESS model and the OrgModel assignment will then be removed.
- If all of the Resources obtained from the selected OrgModel have been used (assigned to Activities, Resource Downtimes, Resource Shifts, etc.) in the SIMPROCESS model, a dialog will be displayed to advising of that fact. You'll be asked whether you want to **Cancel** the removal action or allow all of those Resources to be kept as if they had been created locally.

If they are kept, they will be indistinguishable from those actually created in the SIMPROCESS model. In addition, the OrgModel cannot be assigned again unless every Resource it contains is renamed, or the ones previously imported from it are renamed in the SIMPROCESS model.

- If only a portion of the Resources obtained from the selected OrgModel have been used in the SIMPROCESS model and others have not, a dialog will be displayed advising of that fact. You'll be asked whether you want to **Keep** the unused Resources, **Remove** them, or **Cancel** the removal action. If **Keep** is selected, they will become indistinguishable from Resources created in the SIMPROCESS model. Selecting **Remove** will remove them from the SIMPROCESS model. In either case, the Resources which have been used will be kept as if they had been defined in the SIMPROCESS model. And finally, the assigned OrgModel will be removed from the list unless **Cancel** is selected.
- If an Org Node from the selected OrgModel has been assigned to a swimlane, a notice will be displayed stating that there are swimlane assignments from the OrgModel and that removing the OrgModel will remove the swimlane assignments. At that point you have the option of continuing or canceling the removal.

Reconcile an Assigned OrgModel

At various times, an assigned OrgModel will be validated. It will be read to determine if the Save Date it contains matches what is stored in the SIMPROCESS model, and further checks will be performed on its Resources if that date matches. (This is done to speed the validation process, though it's highly unlikely that a matching Save Date can occur if there are further changes among Resources.) If the Save Date has changed or if there are differences between the Resources found in the OrgModel and those in SIMPROCESS which originated in the OrgModel, the **Reconcile** button will be enabled.

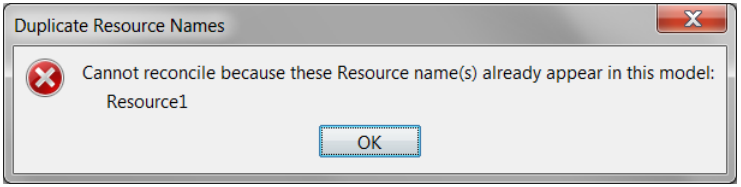


When selected, the reconciliation process begins by first re-validating the OrgModel. If its file is not present or is invalid, reconciliation cannot proceed. (When this occurs the **Update** button may be useful.) Otherwise, a series of conditions will be checked to determine how to proceed. These include:

- Identifying Resources previously obtained from the OrgModel which no longer appear in the OrgModel
- Identifying Resources in the OrgModel which do not appear in the SIMPROCESS model
- Identifying Resources previously obtained from the OrgModel which have since been renamed in the OrgModel
- Identifying swimlanes that have Org Node assignments from Org Nodes that no longer exist or have been renamed.

What actually takes place during the reconciliation process will depend on what is found during evaluation of these conditions.

- If there are Resources present in the OrgModel which have not previously been imported into the SIMPROCESS model, or Resources there which have been renamed in the OrgModel, a check is performed to see if importing new ones or renaming existing ones would result in duplicate Resource names in the SIMPROCESS model. If so, the reconciliation process cannot proceed and a list of the names will be displayed in a dialog like the one shown below.

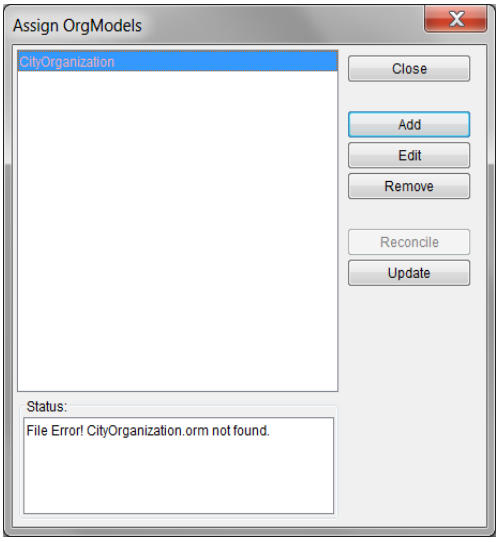


- If the number of new Resources to be imported from the OrgModel would cause the total number to exceed what's allowed by some restricted SIMPROCESS licenses, the reconciliation process cannot proceed.
- If neither of the two conditions just described has occurred, then reconciliation can proceed.
- Resources previously obtained from this OrgModel which are no longer present in the OrgModel will be removed if not used locally.
- Resources previously obtained from this OrgModel which are no longer present in the OrgModel but which are used locally in the SIMPROCESS model will be converted to appear as if they had been locally defined.
- Resources previously obtained from this OrgModel which have been renamed there will have their names changed to match in the SIMPROCESS model.
- Swimlane assignments will be removed if an Org Node no longer exists or the assignments will be updated if an Org Node name has changed.

Finally, the current Save Date in the OrgModel will be placed in the SIMPROCESS model.

Update an Assigned OrgModel

At various times an assigned OrgModel will be validated. Among other things, it will be read to determine if the file is present and readable. If the file associated with the OrgModel is not in its expected location in the `orgmodel` directory (located in the SIMPROCESS working directory), its status will indicate a "File Error" and the **Update** button will be enabled.



In the above example, an OrgModel named `CityOrganization` was assigned but was later moved into a subdirectory named `Demos`. In the **Assign OrgModels** dialog, **CityOrganization** is in red because its file (named `CityOrganization.orm`) is not directly in the **orgmodel** directory. When **Update** is selected, SIMPROCESS tries to find `CityOrganization.orm` at some other location within the `orgmodel` directory (e.g., in a subdirectory). If successful, the OrgModel assignment is changed to reflect the new file location (e.g., "Demos/CityOrganization"). If the file cannot be found, a dialog will so advise and, at that point, the assignment can be removed or kept despite the status.

CHAPTER 4

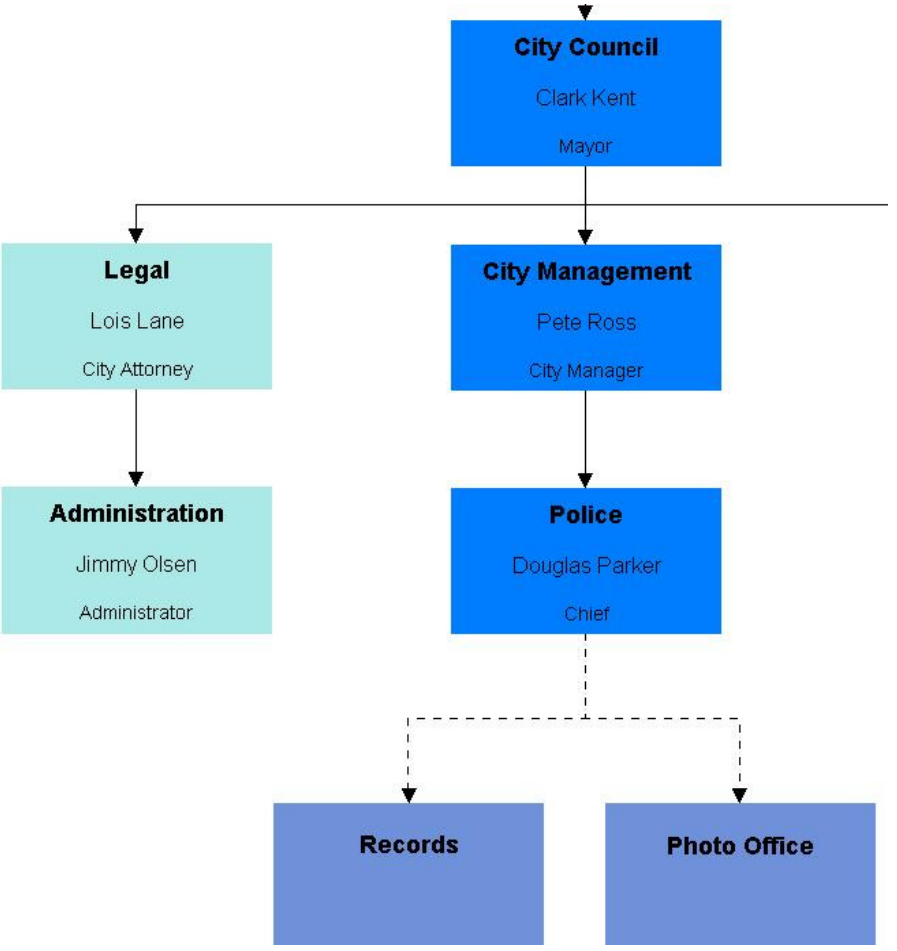
Using OrgModels with SIMPROCESS

This chapter discusses the relationship between OrgModels and SIMPROCESS models.

OrgModels, Org Nodes and Resources

It was previously stated that an OrgModel is essentially an organization chart. It's useful, however, to understand how Resources figure into these models and are then available for use in SIMPROCESS models.

Any Org Node can have Resources defined. The organization depicted in an OrgModel is hierarchical. Each Org Node can have no more than one direct superior; it may have any number of direct subordinates. This hierarchy is then reflected in the "ownership" of Resources that exist within the OrgModel.



A portion of the sample OrgModel `Demos/CityOrganization` is displayed above to illustrate the relationship between the Org Nodes and Resources within the OrgModel. In it, the Org Node representing **Mayor Clark Kent** has no Resources defined. Neither does **City Manager Pete Ross** have any Resources. **Police Chief Douglas Parker**, however, has three defined Resources. Because of the hierarchical nature of the OrgModel, his direct superior, **City Manager Pete Ross**, "owns" his three Resources. Likewise, **Mayor Clark Kent** owns these same three Resources.

City Attorney Lois Lane has a single Resource, as does **Administrator Jimmy Olsen**. Therefore, Lois Lane owns both her Resource and Jimmy Olsen's. **Mayor Clark Kent**, however, is also the owner of those same Resources in addition to those he owns as a direct superior of the **City Manager**. Ownership of Resources, then, is "rolled up" to all direct superior Org Nodes.

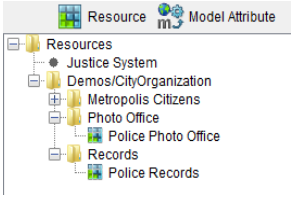
Below **Police Chief Douglas Parker**, you'll see the Org Nodes **Records** and **Photo Office**. They each have a single Resource defined. But the Police Chief is not their direct superior, as evidenced by a dotted Link between them showing that they are supporting subordinates. In an organizational sense, they merely provide support to the Police Chief. As a result, he does not have ownership of their Resources, and they are therefore also not owned by his direct superiors.

SIMPROCESS Models and Resources

With the introduction of OrgModels as a source of Resource definitions, it's no longer sufficient when creating a SIMPROCESS model to simply list all its defined Resources and allow selection of them for use in the various Activities which support it. Instead, a new way of selecting Resources was needed so that the OrgModel structure could be used, and multiple OrgModels could be involved if appropriate. Of course, it's still possible to define Resources in a model as before, so those need to be available for selection as well.

Resource Requirements in Activities

A number of Activities available in SIMPROCESS models have a **Resources** tab on their properties dialogs which allows Resource requirements to be specified. To illustrate how the hierarchy described above impacts the selection process, consider the example below taken from the **Justice System** model included with SIMPROCESS.



It shows a tree view of all available Resources and has been partially collapsed here in order to highlight ownership relationships discussed earlier. This tree makes it possible to select multiple Resources at once and to consider their hierarchical Org Node "ownership" in the selection process.

The folder icon represents a group of Resources. Some high-level group items will be displayed as a "dot" symbol if no Resources exist there for selection or if all have already been selected and added to the Activity. Some lower-level group items will be omitted when it has no Resources available for selection. Here's an overview of the selection capabilities provided by this tree.

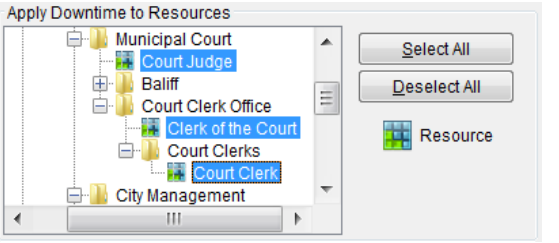
- At the top is a single group item named **Resources** from which it is possible to select all available Resources from the SIMPROCESS model itself and from all assigned OrgModels.

- In the **Justice System** model, there are no locally created Resources so nothing is available to select beneath its group item. If there are locally defined Resources available in a model, then the model's name will display as a folder with all its available Resources listed below it for selection.
- Each assigned OrgModel will appear as a group item. Note the presence of **Demos/ CityOrganization** above, which makes it possible to select every available Resource defined in that OrgModel at one time.
- Note the folder named **Metropolis Citizens**, defined in **Demos/CityOrganization**. This item is collapsed to demonstrate that the citizens have ownership of all the Resources directly subordinate to them, but not those of the **Photo Office** and **Records** Org Nodes, for reasons previously explained. Selecting this item would select every available Resource owned by the citizens, whether directly or by virtue of the rollup process.
- Once all Resources under any particular group item are added to the Activity, then that folder may disappear from the tree or change to the "dot" depicted above, depending on its level in the hierarchy. If all Resources beneath it are removed from the list of requirements, it will reappear or change from the "dot" back to a folder.

Resources and Resource Downtimes

When defining Resource Downtimes in a SIMPROCESS model, a similar tree is displayed, but it has a different behavior. Those Resources which have been applied to the downtime will show that they have been selected. High-level group items, such as the **Justice System** model itself, will appear as dots if they have no Resources to select. Lower-level group items without Resources will not appear at all.

The group items displayed in this tree allow automatic selection or de-selection of Resources below them. It's possible, therefore, to select all available Resources from the model and all assigned OrgModels by clicking the Resources folder at top. Scrolling down through the tree after this would show that every Resource is now selected. Similarly, clicking the name of an assigned OrgModel would select every Resource it contains. Be aware, however, that this would de-select all others already selected. You can use a Control-click to select or de-select without affecting other items outside the hierarchy of what's being clicked.



The example above shows how the selection process works. The OrgModel used in this example is **Demos/CityOrganization**. In a SIMPROCESS model with this OrgModel assigned, a new Resource Downtime is being created. First the Resource named **Court Judge** is selected by clicking its entry. Then to keep it selected while adding more Resources, a Control-click is performed on the "folder" labeled **Court Clerk Office**. The result, displayed here, is that all Resources defined at the Org Node **Court Clerk Office** and all those Resources it owns by virtue of the hierarchy are selected, while the Resource named **Court Judge** also remains selected.

Resource Trees in Other Locations

A tree for selecting Resources can be found in numerous other locations including but not limited to:

- Resource Shift creation allows selecting Resources using a tree which behaves the same as that described for Resource Downtimes.
- Defining a Custom Report and choosing the **Resource** button for selecting values will also display a tree. This one, however, only allows selecting a single Resource at a time, so that a set of available values can then be selected from an additional pane in the dialog containing the tree.
- Defining a Custom Report and choosing the **Report Categories** button, then selecting Resources in the left-hand pane will display a tree which allows selecting of multiple Resources to be included in the report.
- On the **Report** menu, selecting **Define Real-Time Plots** and then **Resources...** will display the **Define Resource Reports** dialog that includes a tree in its left pane. This one allows selecting one Resource at a time, and then an available value in the right-hand pane.
- Defining Custom Real-Time Plots also allows selecting Resources one at a time in a tree to choose the values you want to place into a plot.

You can find complete information on the use of Resources in all these SIMPROCESS facilities in Parts A, B, and C of the *SIMPROCESS User's Manual*.

OrgModels, Org Nodes and Swimlanes

See the discussion of the Layout Menu in "Layout Menu" for information on assigning an OrgModel Org Node to a swimlane.

Justice System and Demos/CityOrganization

Many of the models installed with SIMPROCESS and found in the Demos and ExpressionDemos directories are discussed in the Getting Started with SIMPROCESS manual. However, the Justice System model bears additional discussion here since it demonstrates the use of an OrgModel and the Resources it provides.

Why Use an OrgModel?

The description found in the *SIMPROCESS Getting Started Manual* tells the general purpose of this particular model. But why should it use an OrgModel? To begin answering that question, let's revisit the role of SIMPROCESS itself as a process modeling and simulation tool. You might even want to review the topic "What is SIMPROCESS?".

Connect the Process to the Organization

Using SIMPROCESS, you model a "business process," to include its resources and the entities which move through it, and then simulate the process in order to learn things about it and, ultimately, improve the process. However, the business process being modeled is frequently associated with an organization. Indeed, that organization may be related to multiple business processes, and its OrgModel might therefore lend itself to being assigned in multiple SIMPROCESS models. So the first part of the answer to the question is that creating an OrgModel and assigning it to a SIMPROCESS model allows you to "connect" the business process with a related organization.

Connect the Resources in the Organization to the Process

An organization often has Resources associated with specific parts. Each Org Node in an OrgModel could represent a person, a department, or some other concept needed to properly depict the organization being modeled. In the **Demos/CityOrganization** OrgModel, the organization is the fictional city of Metropolis, showing how the city's day to day work gets done. There are other parts not reflected in this OrgModel, but the key organizational parts necessary to operate the city's justice system are represented. Resources have been defined at various Org Nodes which are needed to

accomplish the business of the city's justice system.

Once an OrgModel is assigned to a SIMPROCESS model, its Resources will appear in that model alongside those which were locally defined. (In the **Justice System** model, all of its Resources came from the assigned **Demos/CityOrganization** OrgModel.) It then is possible to change these Resources' costs, unit availability or other values originally set in the OrgModel Editor, and to specify additional properties supported directly in SIMPROCESS such as statistics collection, downtime and more.

See the Results

Having done this, not only is the organization from the OrgModel "connected" to the business process in SIMPROCESS, but the Resources themselves are now associated with the appropriate organizational parts. Having specified what statistics to collect, the costs of various Resources and other details, you can then simulate the model to gather the needed information and examine it via the Standard Report and other tools provided in SIMPROCESS. You now have the ability to connect this data back to the organization behind the business process.